Name Date Class

Chapter Review

The Nature of Science

Part A. Vocabulary Review

Directions: *Write the correct term in the spaces beside each definition. The boxed letters should spell the words that describe the most important scientific tool.*

1. _____ _____ _____ _____ _____ _____ _____ _____ _____ ☐

2. ___ _____ _____ ☐ ____ ____ ____ ____ ____ ____

3. ____ ____ ____ ____ ☐ ____ ____ ____ ____ ____ ____

4. ____ ____ ____ ____ ☐ ____ ____

5. ____ ____ ____ ____ ____ ☐ ____ ____ ____ ____ ____ ____

6. ____ ____ ____ ☐ ____ ____ ____ ____

7. ____ ____ ____ ____ ☐ ____ ____

8. ☐ ____ ____ ____ ____ ____ ____ ____

9. ____ ____ ____ ____ ____ ____ ____ ____

1. use of knowledge to make products or tools

2. a prediction or statement that can be tested

3. SI is used for this purpose

4. sample treated like other experimental groups except no variable is used

5. sample taken without bias

6. a factor in an experiment that can change

7. a way or a process to investigate what is happening around us

8. way to organize and record results and observations

9. The boxed letters spell: _____

Part B. Concept Review

1. Number these steps for doing an experiment in the correct order in the blanks provided.

_____ **a.** Test your hypothesis.

_____ **b.** Analyze your data.

_____ **c.** Recognize the problem.

_____ **d.** Form a hypothesis.

_____ **e.** Communicate your results.

_____ **f.** Draw conclusions.

Assessment

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Chapter Review (continued)

Directions: *Correctly complete each sentence by underlining the best of the three choices in parentheses.*

2. Scientists use (observations, experiments, observations and experiments) to find answers to questions.
3. In today's society, there is/are usually (only one, a pair of, several) scientist[s] working on a problem at one time.
4. (Making a detailed plan, Making a model, Identifying the problem) is the first step a scientist would take to solve a problem.
5. Modern (communications technologies, satellite tracking systems, DVDs) have led to a globalization of science.
6. Information about new scientific discoveries is (limited to scientists, available to people in the United States, available to people worldwide).

Directions: *Answer the following questions on the lines provided.*

7. How do new scientific discoveries affect our everyday life? Give examples.

8. What are some ways that data can be recorded in a science journal?

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Chapter Test

The Nature of Science

I. Testing Concepts

Directions: *Match the description in the first column with the term in the second column by writing the correct letter in the space provided. Some items in the second column may not be used.*

_____ **1.** a way to record results and observations accurately

_____ **2.** a single run of an experiment

_____ **3.** the application of science to make products or tools

_____ **4.** a way or a process to investigate what is happening around us

_____ **5.** a prediction or statement that can be tested

_____ **6.** a slanted view

_____ **7.** a factor that can change in an experiment

_____ **8.** used to represent things that happen too slowly or quickly to observe directly

_____ **9.** a type of sample taken without bias

_____ **10.** sample treated like other experimental groups except no variable is used

a. model
b. random
c. data table
d. trial
e. technology
f. science log
g. control
h. scientist
i. hypothesis
j. bias
k. variable
l. science

Directions: *Identify each statement as* **true** *or* **false**. *Rewrite false statements to make them correct.*

_____ **11.** A hypothesis is a statement of fact.

_____

_____ **12.** Scientific discoveries are made only by professional scientists.

_____

_____ **13.** Scientific discoveries influence only areas related to our health.

_____

_____ **14.** Any information gathered from the Internet can be assumed to be accurate.

_____

_____

_____ **15.** The more trials you can run in an experiment, the more reliable the results.

_____

_____

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Chapter Test (continued)

II. Understanding Concepts

Skill: Designing an Experiment

Directions: *Answer the following question on the lines provided.*

1. How could you use two beakers, distilled water, two hot plates, two thermometers, and salt to test if adding salt affects the boiling point of water?

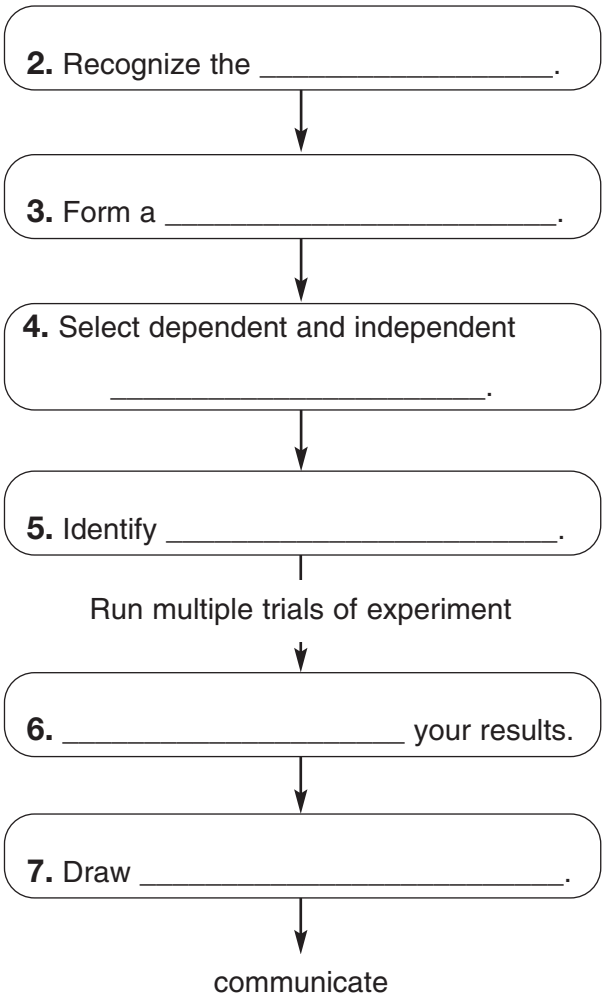
_____

_____

_____

Skills: Concept Mapping

Directions: *Complete the following events chain for doing experimental research.*



Assessment

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Chapter Test (continued)

Skill: Comparing and Contrasting

Directions: *Answer the following question using complete sentences.*

8. Compare and contrast science and technology.

III. Applying Concepts

Directions: *Match the following SI units with what they measure.*

_____ **1.** meter	**a.** temperature
_____ **2.** gram	**b.** liquid volume
_____ **3.** tonne	**c.** area
_____ **4.** liter	**d.** length
_____ **5.** degrees Celsius	**e.** mass

Directions: *Answer the following questions on the lines provided.*

6. Explain the importance of multiple trials when conducting experiments.

7. Compare and contrast dependent variables with independent variables in a controlled experiment.

8. How is a control useful in a scientific experiment?

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Chapter Test (continued)

9. Discuss two advantages of using the International System of Units, or SI, for measurements in scientific research.

IV. Writing Skills

Directions: *Answer the following questions in complete sentences on the lines provided.*

1. If an experiment tested two variables at the same time, would the findings of the experiment be reliable? Explain.

2. Give two examples of what could cause scientists to change a hypothesis or theory they have formulated.

3. Can you think of any tools or technologies that might have developed from people's observations of natural phenomena?

4. Discuss a theory as compared with a hypothesis and a natural law.

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